Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims

1. (Currently Amended) A method of spectrum analysis in two-dimensional representations of a specific analyzed object, wherein ~~as for the specific analyzed object, when~~ spectral data ~~where~~ containing the intensity of the signal output ~~of~~ from a spectrophotometer is represented as a function of ~~its~~ wave-number, wavelength or time ~~are prepared letting n and m (n ≠m) be a positive integer~~, the n-th and m-th derivatives of spectral data with respect to wave-number, wavelength or time ~~of intensity on the spectral profile on the said spectral data~~ are calculated, where n and m are integers and n does not equal m, points are plotted in a ~~on the~~ two-dimensional coordinate plane such as in a ~~as the~~ X-Y coordinate system, where the ~~whose~~ X-coordinate is the ~~said~~ n-th derivatives and the ~~whose~~ Y-coordinate is the ~~said~~ m-th derivative; ~~s respectively, on the said two-dimensional coordinate plane are plotted, and a two-dimensional derivative plot on the said spectral data is prepared the specific~~ characteristic information on the ~~said~~ spectral data ~~are~~ is obtained based on the said two-dimensional derivative plot comprising;

(A) a step wherein based on the said characteristic information, at least one component band is estimated after the band parameter values regarding at least one component band among the component bands contained in the spectral profile of the analyzed object are estimated,

(B) a step wherein the two-dimensional derivative plot with a specific component band removed is obtained by clearing a specific component band or specific component bands already estimated or the two-dimensional derivative plot from th spectral profile or a two-dimensional derivative plot of the analyzed object,

(C) a step wherein specific characteristic information based on the two-dimensional derivative plot with this specific component removed is obtained, and band parameter values on remaining component bands are estimated based on the said characteristic information, and

(D) a step wherein the already estimated band parameter vales are so adjusted that the already estimated specific component band and the complementary estimation component band with the estimated component band removed coincide with each other, the complementary estimation component band retaining the said estimated specific component band from a spectral profile or two-dimensional derivative plot of the analyzed object; ~~except the said estimated specific component band from a spectral profile or two-dimensional derivative plot of the analyzed object coincide with each other,~~

and after ~~estimated~~ estimating the component band which comprises a spectral profile of the analyzed object by estimating component bands in order by iterating steps (A) to (C), adjusting the already estimated parameter values by a step (D).

2. (Original) A method of spectrum analysis in two-dimensional representation as set forth in claim 1, wherein the component band is a Gaussian band, a Lorentzian band, or a mixture thereof.

3. (Previously presented) A method of spectrum analysis in two-dimensional representation as set forth in claim 1, wherein n is 1 and/or 3 and m is n+1.

4. (Previously presented) A method of spectrum analysis in two-dimensional representation as set forth in claim 2, wherein in the two-dimensional derivative plot where pairs of the first and second derivatives are represented in X-Y coordinate system, when a typical local minimum indicates the existence of a corresponding component band, an X position of the said local

minimum is a first approximation of band center position Act of the said component band, setting several points on the said two-dimensional derivative plot in the vicinity of P_d, point of intersection of the said two-dimensional derivative plot with the X-axis, as candidates for the inflation point of the said component band, estimating the bandwidth of the said component band from the candidate of the said inflection point by the following Equation (1), estimating the peak height of the said component band from the distances between the said local minimum and the point(s) of intersection of vertical line passing through the said local minimum and the horizontal line(s) passing through the said candidate points, obtaining the candidates for band parameter values of the said component band, and further obtaining the constraint conditions subjected to the band parameter values for the said component band from the said two-dimensional derivative plot, the relation between the bandwidth b_w and the X-position of the inflection point X_p of a single band can be preferably expressed by

$$b_W = (1/K_P) \left| A_{CT} - X_P \right|$$

(In equation, b_W is an estimated value of the bandwidth of a Gaussian or a Lorentzian band, where the coefficient K_P is 0.42466 for Gaussian and 0.288675 for Lorentzian.)

5. (Previously presented) A method of spectrum analysis in two-dimensional representation as set forth in claim 2, wherein in the two-dimensional derivative plot where pairs of the third and fourth derivatives are represented in X-Y coordinate system, when a typical local maximum indicates the existence of a corresponding component band, an X position of the said local maximum is a first approximation of band center position Act of the said component band, setting several points on the said two-dimensional derivative plot in the vicinity of Q_d, point of intersection of the said two-dimensional derivative plot with the X-axis, as candidates for the secondary inflection point of the said component band, estimating the bandwidth of the said

component band from the candidate of the said secondary inflection point by the following Equation (2), estimating the peak height of the said component band from the distances between the said local maximum and the point(s) of intersection of vertical line passing through the said local maximum and the horizontal line(s) passing through the said candidate points, obtaining the candidates for band parameter values of the said component band from the said two-dimensional derivative plot, the relation between the bandwidth b_W and the X-position of the secondary inflection point X_Q of a single band can be preferably expressed by

$$b_W = (1/K_P) \left| A_{CT} - X_Q \right|$$

(In the equation, b_W is an estimated value of the bandwidth of a Gaussian or a Lorentzian band, where the coefficient K_Q is 0.31508 for Gaussian and 0.16426 for Lorentzian.)

6. (Canceled)

7. (Currently Amended) A method of spectrum analysis in two-dimensional representation as set forth in claim 1, wherein spectral data are infrared spectra, visible light spectra, ultraviolet spectra, Raman spectra, X-ray diffractograms, and chromatograms~~, etc~~.